ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS CALLICARPA. IX

Harold N. Moldenke

CALLICARPA L.

Additional & emended bibliography: Rumph., Herb. Amboin. 4: 114—118 & 123—125, pl. 58—60. 1743; Lam., Encycl. Méth. 1: 54 (1783) and 1: 562—563. 1785; Willd., Enum. Plant. Hort. Berol. 157—158. 1809; Roxb., Hort. Beng. [10] & [83]. 1814; Wall., Numer. List [50] (as "49"), nos. 1827—1835. 1829; Hook. & Arn., Bot. Beech. Voy. 205—206 & 268, pl. 46. 1836; Royle, Ill. Bot. Himal. 299. 1836; Hassk., Cat. Pl. Hort. Bot. Bogor. Cult. Alt. 136. 1844; Brandis, For. Fl. NW. & Cent. India 3: 368—369. 1874; Gamble, Man. Ind. Timb. 282—283 & 525. 1881; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 106, 386, & 1100. 1893; J. L. Stewart, Punjab Pl. 165. 1899; Collett, Fl. Siml. 380. 1902; Brandis, Ind. Trees 512. 1906; Duthie, Fl. Upper Gang. Plain 2: 215, 218—219, & 263. 1911; R. N. Parker, For. Fl. 397. 1918; Nakai, Trees & Shrubs Indig. Jap., ed. 1, 336—340. 1922; Betts, Jefferson's Gard. Book 23, 27, 30, 139, 140, & 672. 1944; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 106, 386, & 1100 (1946) and pr. 3, 1: 106, 386, & 1100. 1960; Chuang, Chao, Hu, & Kwan, Taiwania 1 (8): 54, 59, & 66, pl. 6, fig. 88. 1963; A. B. Chowdhury in Lahiri, West Beng. Forests 100. 1964; Anon., Ind. Bibliogr. Bot. Trop. 4: 54. 1967; R. R. Stewart, Pakistan Journ. Forest. 17: 515. 1967; Schuster, Southwest. Nat. 12: 344—345. 1967; Hocking, Excerpt. Bot. A.11 (6): 503 & 505. 1967; Moldenke, Phytologia 16: 216—218. 1968.

It should perhaps be noted here that the H.B.K. reference dates given in the emended bibliography of this genus have been authenticated by consultation with Barnhart (1902). The plate illustration Rumphius' Frutex ceramicus in the library of the New York Botanical Garden is no. 59 (not "60") as claimed by Merrill.

The Hooker & Arnott references given in the bibliography above are often cited as "1841". Actually pages 193—288 and plates 40—59 were issued in 1836 and pages 289—384 with plates 60—79 in 1838. The Willdenow (1809) reference, also given above, is sometimes cited as "1808", but the correct date seems to be 1809.

Hyams (1967) tells us that the members of the genus Callicarpa [known to him] should be cultivated in acid soils rich in leafmold. Hellyet (1966) says that the cultivated species all tend to die back in especially cold and wet places and produce leaves that take on pink or purple hues before falling off in the autumn, that it is advisable to cut them back each spring, and that they may be propagated by seeds sown in the greenhouse in spring, by layers in the autumn, or by summer cuttings under mist. Lewis (1961) suggests that the basic chromosome number in this genus is x = 9.

The seeds of Callicarpa are described by Martin & Bradley (1961) — apparently based only on an examination of those of C. americana — as elliptic, flattish or concave-convex, narrowly margined on the concave side and with a central attachment scar, white to light-brown, and 1.5—2.5 mm. long.

CALLICARPA ACULEOLATA Schau.
Additional bibliography: Moldenke, Phytologia 14: 219. 1967; Hocking, Excerpt. Bot. A.11 (6): 505. 1967.

CALLICARPA ACUMINATA H.B.K.
Additional bibliography: Hocking, Excerpt. Bot. A.11 (6): 505. 1967; Moldenke, Phytologia 16: 218. 1968.
Roe and his associates found this plant growing on steep moist north-facing limestone talus slopes with a dense canopy and with many lianas and epiphytes in tropical evergreen forest vegetation on rolling hills in San Luis Potosí, Mexico, while Carter & Chisaki describe it as a tall slender shrub, 2--4 m. tall, growing in dense forests alongside of trails in Jalisco, fruiting in March.
Additional citations: MEXICO: Jalisco: Carter & Chisaki 1260 (Mi). San Luis Potosí: Roe, Roe, & Mori 209 (Mi). PERU: San Martín: Belshaw 3148 (Rf).

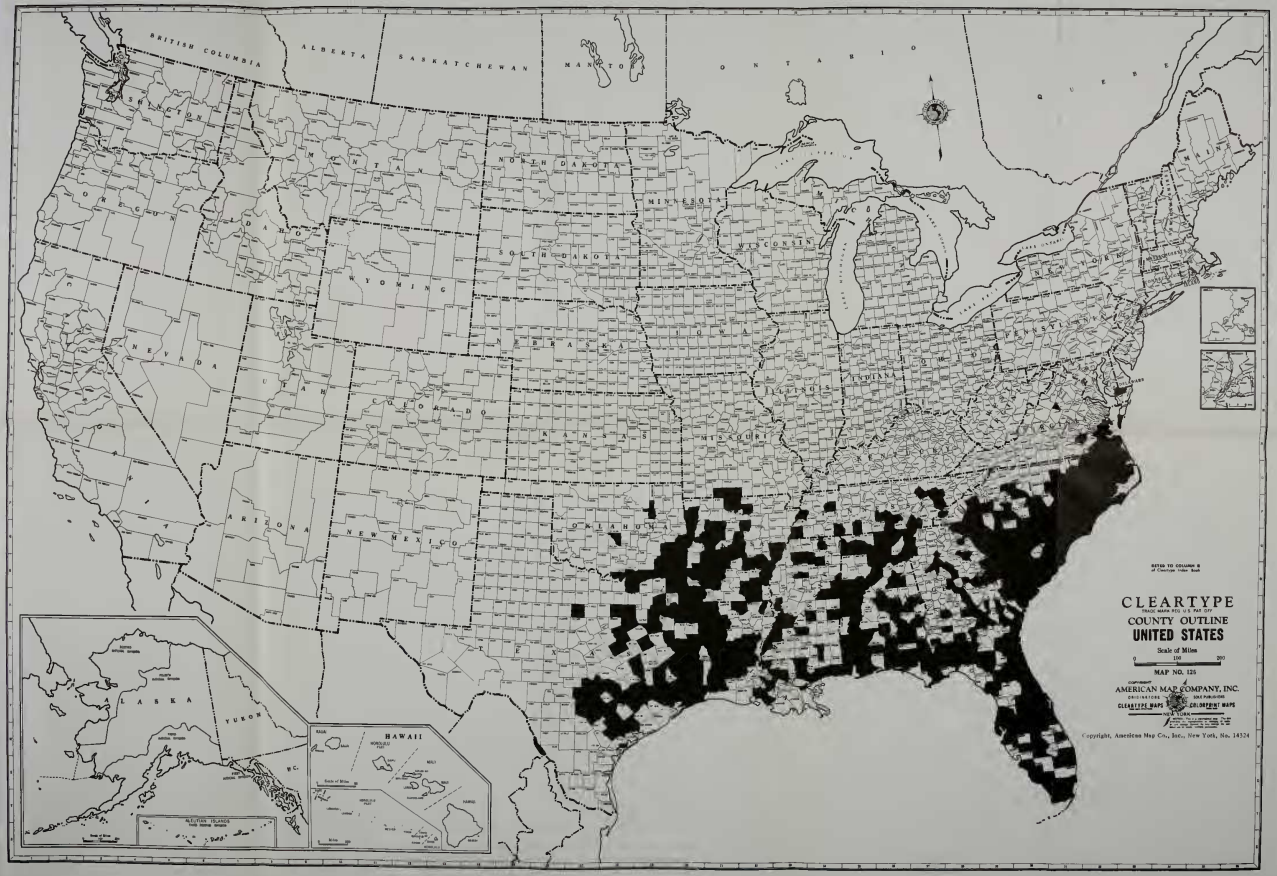
CALLICARPA ALONGENSIS Dop
Additional bibliography: P. Dop, Trav. Lab. For. Toulouse 1 [Artic. Divers. 1] (21): 9, 10, 18, 20, & 21. 1932; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14354. 1958; Moldenke, Phytologia 13: 438—439. 1966.

CALLICARPA AMERICANA L.
Additional bibliography: Robin, Fl. Louis. 384. 1807; Willd., Enum. Plant. Hort. Berol. 157—158. 1809; Raf., Fl. Ludovic., pr. 1, 38--39. 1817; H.B.K., Nov. Gen. & Sp. Pl., ed. folio, 2: 204 (1817) and ed. quart., 2: 252. 1818; Schnitzl., Icon. Fam. Nat. Reg. Veg. 137. 1856; Meehan, Meehan's Monthly 11: 129—130, pl. 9. 1901; Barnhart, Bull. Torrey Bot. Club 29: 590. 1902; Beissner, Schelle, & Zabel, Handb. Laubh. 425. 1903; Schelle, Pareys Blumengärtn., ed. 1, 2: 278. 1932; Rendle, Notes Fl. Bermuda 18. 1937; Hylander, Macm. Wild Flow. Book 340. 1954; Krüssmann in Pareys Blumengärtn., ed. 2, 2: 445. 1960; Martin & Bradley, Seed Ident. Man. 115 & 195, fig. 261 & 792. 1961; W. H. Lewis, Southwest Nat. 6: 47—48, fig. 1. 1961; Cave, Ind. Pl. Chromosome Numb. 2: 136. 1961; Batson, Wild Fls. S. C. 100. 1964; N. Taylor, Guide Gard. Shrubs & Trees 340—341 & opp. 342, fig. 4. 1965; Chopra, Badhwar, & Ghosh, Poison. Pl. India 2: 695. 1965; S. A. Manning, Syst. Guide Flow. Pl. 18 & 142. 1965; Moldenke, Phytologia 15: 14--15, 24, 28, & 30. 1967; Moldenke, Résumé Suppl. 15: 1, 2, & 14. 1967; H. Marsh., Arbust. Amer., ed. Ewan, 22--23. 1967; Raf., Fl. Ludovic., pr. 2, 38—39. 1967; P. Gray, Dict. Biol. Sci. 315. 1967; Schuster, Southwest. Nat. 12: 344—345. 1967; Hocking, Excerpt. Bot. A.11 (6): 505. 1967.

Figure 21. Distribution of Callicarpa americana in the United States

Herbarium curators who have material of this species from additional counties are asked to send it to the author for verification and record, so that future editions of this map may be more complete

Mapping by counties done by Andrew R. Moldenke



Additional illustrations: Meehan, Meehan's Monthly 11: pl. 9 [in color]. 1901; Martin & Bradley, Seed Idant. Man. fig. 261 & 792. 1961; W. H. Lewis, Southwest. Nat. 6: 47, fig. 1. 1961; Batson, Wild Fls. S. C. 100 [in color]. 1964; N. Taylor, Guide Gard. Shrubs & Trees opp. 342, fig. 4 [in color]. 1965.

The Willdenow (1809) reference given in the bibliography above is sometimes erroneously cited as "1808". In Germany this species is often called "amerikanische Schönfrucht".

Taylor (1965) emphasizes that C. americana is easily distinguished by its flower-stalks being shorter than the petioles. He avers that the plants are persistent from year to year from Life Zone 5 southward in North America. Chopra, Badhwar, & Ghosh (1965) report that the species is "said to be poisonous". Manning (1965) tells us that its flowers are pollinated "by insects", including bees, and that its seeds are without endosperm. Hylander (1954) reports that it blooms from June through August. Betts (1944) tells us that it was cultivated in Thomas Jefferson's garden and is mentioned by him in his garden record book on September 30, 1771.

Krüssmann (1960) gives the distribution of the species very accurately as "Maryland bis Arkansas, südlich bis Florida, Texas und Mexiko, Bermudas, Bahama-Inseln, Westkuba; in Wäldern, feuchten Gebüschen, Sumpfrändern usw., Juni, Juli". He states that it was introduced into cultivation in 1724.

Lewis (1961) and Cave (1961) report the haploid chromosome number as 18, based on Lewis & Oliver 5232 & 5244 from Nacogdoches and Angelina Counties, Texas. Lewis suggests that the species is a tetraploid one.

Additional citations: NORTH CAROLINA: Scotland Co.: Ahles 37009 (Ms—46746). FLORIDA: Duval Co.: Curtiss 1971 [June] (Ms—30938), 1971 [Sept.] (Ms—30938), s.n. [June 1876] (Ms—7177); Edw. Palmer 402 (Mi). Gadsden Co.: Herb. Amherst Coll. 30939 (Ms). Manatee Co.: S. M. Tracy 7534 (Mi). ARKANSAS: Miller Co.: Heller & Heller 4158 (Ms—30940). LOUISIANA: East Baton Rouge Par.: Joor s.n. [East Baton Rouge] (Ms—34125). TEXAS: Tyler Co.: Tharp, Gimbrede, & Yang 51-1465 (Ms—34124). Wilson Co.: Edw. Palmer 1054 (Ms—30941).

CALLICARPA AMERICANA var. LACTEA F. J. Muller

Additional bibliography: Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14354. 1958; N. Taylor, Guide Gard. Shrubs & Trees 341. 1965; Moldenke, Phytologia 15: 14—15. 1967; Hocking, Excerpt. Bot. A.11 (6): 505. 1967.

CALLICARPA ANGUSTA Schau.

Additional bibliography: Moldenke, Phytologia 15: 15. 1967; Moldenke, Résumé Suppl. 15: 11. 1967.

CALLICARPA ARBOREA Roxb.

Additional & emended bibliography: Watt, Econ. Prod. India 5: 68

(1883) and 7: 54. 1883; Prain, Beng. Pl., ed. 1, 2: 827. 1903; Duthie, Fl. Upper Gang. Plain 2: 219. 1911; Haines, Bot. Bihar & Orissa 4: 709. 1922; Gamble, Fl. Presid. Madras 6: 1091 & 1092. 1924; P'ei, Sinensia 2: [65]—66. 1932; Deb, Bull. Bot. Surv. India 3: 314. 1961; Panigrahi & Naik, Bull. Bot. Surv. India 3: 376. 1961; Prain, Beng. Pl., ed. 2, 2: 617 & 618. 1963; Legris, Trav. Sect. Scient. Inst. Franç. Pond. 6: 213, 501, 513, 542, & 558. 1963; Bhatnagar, Journ. Indian Bot. Soc. 42: 369 & 374. 1963; A. B. Chowdhury in Lahiri, West Beng. Forest 100. 1964; Datta, Handb. Syst. Bot. 181. 1965; Banerji, Rec. Bot. Surv. India 8: 4. 1966; Moldenke, Phytologia 15: 15—15. 1967; Moldenke, Résumé Suppl. 15: 8 & 11. 1967; Hocking, Excerpt. Bot. A.11 (6): 505. 1967.

Datta (1965) describes this plant as a tree, 12 m. tall. Bhatnagar (1963) calls it a rare evergreen tree in the low-lying areas of Assam. An additional vernacular name recorded for it is "bormalla". Panigrahi & Naik (1961) describe the tree as growing to a height of 13—15 m., the leaves being dark-green above, whitish beneath, and the flowers greenish-white. They cite Pitepool 19632. Deb (1961) comments that this is one of the first species of plants to invade abandoned "jhum" land and other bare hill lands in Manipur, India. He cites his numbers 39, 1404, 1938, and 2615.

Chowdhury (1964) reports that this species comprises about 1.63 percent of scattered Shorea robusta and wet mixed forests in some parts of India, 0.1 percent of plain wet mixed forests, and 8.2 percent of dry mixed forests.

Material has been misidentified and distributed in herbaria as C. macrophylla Vahl.

Additional citations: INDIA: Madras: Herb. Mus. Paris. s.n. [Coromandel] (W—2496742).

CALLICARPA AREOLATA Urb.

Additional bibliography: Moldenke, Phytologia 14: 42 (1966) and 14: 238. 1967.

CALLICARPA AUSTRALIS Koidz.

Additional bibliography: Nakai, Fl. Sylv. Korean. 14: 31 & 133. 1923; Hara, Enum. Sperm. Jap. 1: 184. 1948; Ohwi, Fl. Jap. 764. 1965; Moldenke, Phytologia 14: 42—43. 1966.

Nakai (1923), Hara (1948), and Ohwi (1965) reduce this taxon to synonymy under C. japonica var. luxurians Rehd.

CALLICARPA BARBATA Ridl.

Additional bibliography: Moldenke, Phytologia 14: 43—44. 1966; Van Steenis, Blumea 15: 149. 1967.

CALLICARPA BICOLOR A. L. Juss.

Additional bibliography: Moldenke, Phytologia 15: 16—18 & 22. 1967; Moldenke, Résumé Suppl. 15: 11. 1967.

CALLICARPA BICOLOR var. BERMEJOSI Moldenke
Additional bibliography: Moldenke, Phytologia 15: 17 & 19. 1967; Moldenke, Résumé Suppl. 15: 11. 1967.

CALLICARPA BICOLOR var. SUBINTEGRIFOLIA Moldenke
Additional bibliography: Moldenke, Phytologia 15: 17—18 & 24. 1967; Moldenke, Résumé Suppl. 15: 11. 1967.

CALLICARPA BODINIERI Léveillé
Additional & emended bibliography: Krüssmann in Pareys Blumengärtn., ed. 2, 2: 445 & 446. 1960; Hellyer, Shrubs in Colour, pr. 1, 20 & 22 (1965) and pr. 2, 20 & 22. 1966; Moldenke, Phytologia 15: 18—19, 30—32, 38, & 39. 1967; Moldenke, Résumé Suppl. 15: 10, 14, & 16. 1967; J. F. Williamson, Sunset West. Gard. Book, new ed., 207. 1967; E. Hyams, Ornam. Shrubs Temp. Zone 5: 27. 1967.
The Bodinier specimen cited below probably represents cotype material, but its label does not plainly indicate this.
Additional citations: CHINA: Kweichow: Bodinier s.n. (W—2496754).

CALLICARPA BODINIERI var. GIRALDII (Hesse) Rehd.
Additional & emended bibliography: W. J. Bean, Garden 88: 184. 1924; P'ei, Sinensia 2: 66—67. 1932; Schelle, Pareys Blumengärtn., ed. 1, 278. 1932; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56, 58, 71, 86, & 87. 1942; H. N. & A. L. Moldenke, Pl. Life 2: 61 & 71. 1948; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 130, 131, 135, 156, & 177. 1949; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14354. 1958; Moldenke, Résumé 167, 168, 174, 213, 241, 243, 244, 443, & 444. 1959; Krüssmann in Encke, Pareys Blumengärtn., ed. 2, 2: 445. 1960; Hellyer, Shrubs in Colour, pr. 1, 20 & 22 (1965) and pr. 2, 20 & 22. 1966; Moldenke, Phytologia 15: 18, 30—32, 38, & 39. 1967; Moldenke, Résumé Suppl. 15: 14 & 16. 1967; J. F. Williamson, Sunset West. Gard. Book, new ed., 207. 1967; E. Hyams, Ornam. Shrubs Temp. Zone 5: 27. 1967.
Additional illustrations: Schelle, Pareys Blumengärtn., ed. 1, 2: 278. 1932; Hellyer, Shrubs in Colour, pr. 1, 22 [in color] (1965) and pr. 2, 22 [in color]. 1966.
Hyams (1967) tells us that the leaves of this plant turn "a soft madder-pink" before falling in the autumn and that giraldii was introduced from China in 1907 [actually in 1848!]. The popular name for the plant in Germany is "Giralds Schönfrucht".
Krüssmann (1960) cites as illustrations "M. D. 1912: 366" and "R. H. 1923: 391", but this does not exactly correspond to the citations given by me in Phytologia 14: 56 (1966). The first apparently refers to Hesse, Mitt. Deutsch. Dendrol. Gesell. 21: 368 & 369 (1912) and the second to Mottet, Rev. Hort. 94: opp. 390 (1923). He describes the variety as "Sehr winterhart und schön".
The C. longifolia Hance referred to in the synonymy of this variety should be dated "1890" rather than "1932" as it is in Phytologia 14: 55 (1966), while that credited to Bentham should be

dated "1962", not "1966".

CALLICARPA BREVIPES (Benth.) Hance

Additional bibliography: Moldenke, Phytologia 15: 19 & 39. 1967; Moldenke, Résumé Suppl. 15: 12. 1967.

The Boeea 8017, cited as C. brevipes in Phytologia 14: 103 (1966), is actually C. brevipetiolata Merr. instead.

The C. longifolia Hance, referred to in the synonymy of C. brevipes, should be dated "1890", rather than "1932", while that accredited to Bentham should be dated "1962", not "1966".

CALLICARPA BREVIPETIOLATA Merr.

Additional bibliography: Moldenke, Phytologia 15: 19. 1967.

The Boeea 8017, cited below, was previously incorrectly cited by me as C. brevipes (Benth.) Hance, which is closely resembles.

Additional citations: INDONESIA: GREATER SUNDA ISLANDS: Sumatra: Boeea 8017 (S).

CALLICARPA CANDICANS (Burm. f.) Hochr.

Additional synonymy: Callicarpa candicans var. typica Hochr., Candollea 5: 190. 1934. Callicarpa canadicans Kawazu, Inaba, & Mitsui, Biol. Abstr. 48: 8109, sphalm. 1967. Callicarpa candicans Hochr. ex Kawazu, Inaba, & Mitsui, Agr. Biol. Chem. 31: 496. 1967.

Additional & emended bibliography: Willd., Enum. Plant. Hort. Berol. 158. 1809; Roxb., Hort. Beng. [10]. 1814; Watt, Econ. Prod. India 7: 54. 1883; Prain, Beng. Pl., ed. 1, 2: 827 & 828. 1903; A. Chev., Cat. Pl. Jard. Bot. Saigon 35. 1919; Hosokawa, Journ. Soc. Trop. Agr. Taiwan 6: 205. 1934; Prain, Beng. Pl., ed. 2, 2: 617 & 618. 1963; Bose, Handb. Shrubs 17, 34, & 104. 1965; Moldenke, Phytologia 15: 19—20 & 23. 1967; Moldenke, Résumé Suppl. 15: 10, 14, & 16. 1967; Anon., Biol. Abstr. 48 (18): S.27. 1967; Kawazu, Inaba, & Mitsui, Agr. Biol. Chem. 31: 494—506. 1967; Kawazu, Inaba, & Mitsui, Biol. Abstr. 48: 8109. 1967.

The Willdenow (1809) reference given in the bibliography above was previously incorrectly cited by me as "1808".

Prain (1963) tells us that this species is often cultivated in Bengal and is even naturalized in central Bengal, but is actually native to the Malay Peninsula. Bose (1965) states that in India this species is hardy and quick-growing, propagated by cuttings, and that it should be pruned in the early rains after flowering.

Kawazu and his associates (1967) have isolated a fish-killing compound which was named callicarpone, $C_{20}H_{28}O_4$, from the leaves of this species. Its toxicity to fish is as strong as that of rotenone and ten times stronger than that of sodium pentalchlorophenoxide.

Chevalier (1919) records the additional vernacular name "nàng nàng" for the species in Vietnam.

The Herb. Hort. Bot. Calcutt. s.n. and Steward & Cheo 876, distributed as C. candicans, are actually C. macrophylla Vahl.

Additional citations: INDOCHINA: Vietnam: Demange 1173 (W—2496565). INDONESIA: LESSER SUNDA ISLANDS: Timor: Herb. Cosson s.n. (W—2496745).

CALLICARPA CAUDATA Maxim.
Additional bibliography: Moldenke, Phytologia 15: 20. 1967; Moldenke, Résumé Suppl. 15: 11. 1967.

CALLICARPA CAULIFLORA Merr.
Additional bibliography: Moldenke, Phytologia 15: 20. 1967; Van Steenis, Blumea 15: 151. 1967.

CALLICARPA CRASSINERVIS Urb.
Additional bibliography: Moldenke, Phytologia 15: 20. 1967; Moldenke, Résumé Suppl. 15: 17. 1967.
The Carabia 3803, distributed as C. crassinervis, is actually C. lancifolia Millsp.

CALLICARPA CUBENSIS Urb.
Additional bibliography: Moldenke, Phytologia 14: 149—155. 1966; Moldenke, Résumé Suppl. 15: 17. 1967.

CALLICARPA DENTICULATA Merr.
Additional bibliography: Moldenke, Phytologia 14: 155—156. 1966; Moldenke, Résumé Suppl. 15: 11. 1967.

CALLICARPA DICHOTOMA (Lour.) K. Koch
Additional synonymy: Callicarpa dichotoma (Lour.) Raeusch. apud Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 25, sphalm. 1921. Calycarpon gracilis A. Br., in herb.
Additional bibliography: Beissner, Schelle, & Zabel, Handb. Laubh. 425. 1903; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 25—26 & 125. 1921; P'ei, Sinensia 2: 68. 1932; Hara, Enum. Sperm. Jap. 1: 182—183. 1948; Kitamura & Okamoto, Col. Illustr. Trees & Shrubs Japan 220, pl. 65. 1960; Krüssmann in Encke, Pareys Blumengärtn., ed. 2, 2: 445. 1960; Ohwi, Fl. Jap. 764. 1965; N. Taylor, Guide Gard. Shrubs & Trees 340. 1965; R. E. & C. R. Harrison, Know Your Trees 39, pl. 93. 1965; Moldenke, Phytologia 15: 20—21, 29—32, 34, 36, & 39. 1967; Moldenke, Résumé Suppl. 15: 8, 14, 16, 17, & 20. 1967; J. F. Williamson, Sunset West. Gard. Book, new ed., 207. 1967.
Additional illustrations: Kitamura & Okamoto, Col. Illustr. Trees & Shrubs Japan pl. 65 [in color]. 1960; N. Taylor, Guide Gard. Shrubs & Trees 340. 1965.
In Germany this species is called "purpurblütige Schönfrucht". Ohwi calls it "ko-shikibu".
Taylor (1965) emphasizes that in this species the peduncles are longer than the petioles which subtend them. He says that the plant is "persistent" [hardy] from Life Zone 5 southward in the United States.
The cheironymous binomial, Calycarpon gracilis, is based on

the Addison Brown collection cited below. Krüssmann (1960) cites as an illustration "Gn. 23: 540". Perhaps he refers here to W. Robinson, The Garden 23: pl. 392 (1883).

The Richardson s.n. [Liverpool Bot. Gard., Oct. 4, '89], distributed as C. dichotoma, is actually C. rubella Lindl.

Additional citations: CULTIVATED: New York: Addison Brown s.n. (Ms—30942).

CALLICARPA ELEGANS Hayek

Additional bibliography: Moldenke, Phytologia 15: 21—22. 1967; Moldenke, Résumé Suppl. 15: 12, 16, & 17. 1967.

CALLICARPA ERIOCLONA Schau.

Additional synonymy: Callicarpa tomentosa L. ex Moldenke, Résumé 247, in syn. 1959 [not C. tomentosa Bakh., 1932, nor Hook. & Arn., 1918, nor König, 1893, nor "L. [ex Spreng.]", 1825, nor "L. [ex Willd.]", 1966, nor (L.) Murr., 1774, not (L.) Santapau, 1965, nor Lam., 1783, nor Murr., 1774, nor Thunb., 1959, nor Vahl, 1794, nor Willd., 1809, nor "sensu Matsum.", 1964].

Additional bibliography: Moldenke, Phytologia 15: 22—23. 1967; Moldenke, Résumé Suppl. 15: 11—13 & 16. 1967.

The C. tomentosa ascribed to Bakhuizen van den Brink in the synonymy above is a synonym in part of C. arborea Roxb. and in part of C. integerrima Champ., that ascribed to Hooker & Arnott, to Willdenow, and to Matsumura is C. kochiana Mak., that ascribed to König is C. macrophylla Vahl, that ascribed to Linnaeus "ex Sprengel" and to Lamarck is C. candicans (Burm. f.) Hochr., that ascribed to Linnaeus "ex Willdenow", to Murray, and to "(L.) Santapau" is C. tomentosa (L.) Murr., a valid species, that ascribed to Thunberg is C. longifolia Lam., while that credited to Vahl is as yet undetermined.

CALLICARPA ERIOCLONA f. GLABRESCENS Moldenke

Additional bibliography: Moldenke, Phytologia 15: 23. 1967; Moldenke, Résumé Suppl. 15: 12. 1967.

CALLICARPA ERIOCLONA var. PAUCINERVIA (Merr.) Moldenke

Additional bibliography: Hosokawa, Journ. Soc. Trop. Agr. Taiwan 6: 206. 1934; Moldenke, Phytologia 15: 23. 1967; Van Steenis-Kruseman, Pl. Males. Bull. 4: 1069. 1967; Moldenke, Résumé Suppl. 15: 12. 1967.

CALLICARPA FORMOSANA Rolfe

Additional bibliography: Kanehira & Hatusima, Bot. Mag. Tokyo 56: 113. 1942; Li & Keng, Taiwania 1 (2—4): 127. 1950; Lee & Keng, Taiwania 1 (5): 5. 1954; Chuang, Chao, Hu, & Kwan, Taiwania 1 (8): 54, 58, & 63, pl. 3, fig. 39. 1963; Cave, Ind. Pl. Chromosome Numb. 2: 330. 1964; Moldenke, Phytologia 15: 24—26 & 32. 1967; Moldenke, Résumé Suppl. 15: 10, 11, & 16. 1967.

Additional illustrations: Chuang, Chao, Hu, & Kwan, Taiwania

1 (8): 63, pl. 3, fig. 39. 1963.

The Degeners found this plant growing in open woods on Formosa. Lee & Keng (1954) tell us that it is common at altitudes of 300 to 550 meters on that island. Cave (1964) reports the haploid number of chromosomes as 18.

Kanehira & Hatusima (1942) think that C. formosana should be reduced to synonymy under C. longifolia Lam., but with this I cannot possibly agree! The two taxa are very distinct from each other. That it may be conspecific with C. pedunculata R. Br., as claimed by other workers, is very possible.

The Tso 20752, distributed as C. formosana, is actually C. longipes Dunn.

Additional citations: FORMOSA: Degener & Degener 28978 (Ms—50131).

CALLICARPA FORMOSANA f. ALBIFLORA Yamamoto

Additional bibliography: Moldenke, Phytologia 15: 25. 1967; Moldenke, Résumé Suppl. 15: 10 & 11. 1967.

The McClure 3038 [Herb. Canton Chr. Coll. 9591], cited by me as this form in Phytologia 14: 228 (1967), is actually a cotype collection of C. rubella f. robusta P'ei, a taxon which is apparantly very similar to C. formosana in general appearance and concerning whose validity I have serious doubts.

CALLICARPA FORMOSANA f. ANGUSTATA Moldenke

Additional bibliography: Moldenke, Phytologia 15: 25. 1967; Moldenke, Résumé Suppl. 15: 16. 1967.

CALLICARPA FORMOSANA f. PARVIFOLIA Moldenke

Additional bibliography: Moldenke, Phytologia 15: 26. 1967; Moldenke, Résumé Suppl. 15: 11. 1967.

CALLICARPA FULVA A. Rich.

Additional bibliography: Moldenke, Phytologia 15: 26. 1967; Moldenke, Résumé Suppl. 15: 16. 1967.

CALLICARPA FULVOHIRSUTA Merr.

Additional bibliography: Moldenke, Phytologia 14: 234—235. 1967; Moldenke, Résumé Suppl. 15: 17. 1967; Van Steenis, Blumea 15: 149. 1967.

CALLICARPA GLABRA Koidz.

Additional bibliography: Hosokawa, Journ. Soc. Trop. Agr. Taiwan 6: 205. 1934; Moldenke, Phytologia 14: 235—237. 1967.

CALLICARPA HAVILANDII (King & Gamble) H. J. Lam

Additional synonymy: Callicarpa havilandi Ridl., Kew Bull. Misc. Inf. 1929: 260. 1929.

Additional bibliography: Moldenke, Phytologia 15: 26. 1967; Moldenke, Résumé Suppl. 15: 17. 1967; Van Steenis, Blumea 15:

148 & 149, fig. 2K. 1967.
Illustrations: Van Steenis, Blumea 15: 148, fig. 2K. 1967.

CALLICARPA INAEQUALIS Teijsm. & Binn.
Additional bibliography: Moldenke, Phytologia 14: 241—243. 1967; Moldenke, Résumé Suppl. 15: 17. 1967.

CALLICARPA INTEGERRIMA Champ.
Additional bibliography: P'ei, Sinensia 2: 66. 1932; Moldenke, Phytologia 15: 27. 1967.
Additional citations: HONGKONG: Bodinier 682 (W--2496748).

CALLICARPA INVOLUCRATA Merr.
Additional bibliography: Moldenke, Phytologia 14: 246—248. 1967; Van Steenis, Blumea 15: 149 & 151. 1967.
Van Steenis (1967) speaks of this species as "A remarkable species with cauliflorous and ramiflorous inflorescences. The flowers are borne in fascicles either axillary or in fascicles or clusters on knobs on the stem and twigs; by absence of fruit setting they appear to grow into thick, woody, brachyblasts lengthening to 15 cm, with fascicles on top, a situation similarly found in Rapatea, Deltaria, etc. From related species easily distinct by entirely glabrous leaves and twigs, a multitude of (in sicco) immersed dots on both leaf surfaces, each with a fine, globular, yellow gland, and a more or less swollen upper leaf base with few to many flat-crateriform, sessile, larger, prominent glands. A small tree 3—5 m with pale ochraceous papery bark; flowers white, berries white then red. Stamens 4. Seed surrounded by a corky tissue.
"Whether f. clemensae Bakh., found on Mt. Kinabalu at c. 1500 m, is tenable is doubtful; the smaller leaves seem to be the only difference. To the same affinity belong C. cauliflora Merr. and C. ramiflora Merr. from the Philippines, both according to Merrill erroneously reduced to C. pentandra Roxb. They are brown-haired species." He cites from Borneo "BRUN 5248 Ashton; R. Soc. Exp. 1647 Chew, Corner & Stainton; SAN A 3986 G. H. S. Wood; Endert 3836, 3742, 3651; SAR K 79 Anderson & Keng" and cites "M. Ramos 1523" as the type. The type of the species, however, is actually not that number — it is M. Ramos 1395, as is plainly stated by Merrill in the original publication. Van Steenis is also in error in referring to the fruits of this plant as "berries"; they are drupes.

CALLICARPA JAPONICA Thunb.
Additional & emended synonymy: Callicarpa purpurea A. L. Juss., Ann. Mus. Hist. Nat. Paris 7: 67. 1806 [not C. purpurea Hort. ex Lem., 1859, nor Hort. ex Moldenke, 1941, nor Van Houtte, 1932]. Callicarpa mimurazaki Sieb. ex Beissner, Schelle, & Zabel, Handb. Laubh. 425. 1903. Callicarpa americana Thunb. apud Nakai, Bot. Mag. Tokyo 40: 491, in syn. 1926 [not C. americana Blanco, 1884, nor Hort., 1936, nor L., 1753, nor Lam., 1966,

nor Lour., 1794, nor Roxb., 1945, nor Sessé & Moc., 1893, nor Willd., 1820]. Callicarpa mimurazakii Hellyer, Shrubs in Colour 20, in syn. 1966.

Additional & emended bibliography: Lavallée, Arb. & Arbriss. 179. 1877; Beissner, Schelle, & Zabel, Handb. Laubh. 425. 1903; W. J. Bean, Garden 88: 184. 1924; Nakai, Bot. Mag. Tokyo 40: 491-492. 1926; Nakai in Nakai & Koidz., Trees & Shrubs Indig. Jap., ed. 2, 1: 452, 454, & 456, fig. 214 & 215. 1927; Schnelle, Pareys Blumengärtn., ed. 1, 2: 278. 1932; Masam. & Suzuki, Ann. Rep. Taih. Bot. Gard. 3: 66. 1933; Chun, Sunyat. 1: 303. 1934; K. Mori in Masam., Short Fl. Formos. 179. 1936; Terazaki, Suppl. Illustr. Fl. Jap. fig. 2482. 1938; Plouvier, Compt. Rend. Acad. Sci. Paris 231: 1546—1548. 1950; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14354. 1958; Kitamura & Okamoto, Col. Illustr. Trees & Shrubs Japan 220, pl. 65. 1960; Krüssmann in Encke, Pareys Blumengärtn., ed. 2, 2: 445. 1960; W. H. Lewis, Southwest. Nat. 6: 47 & 48. 1961; N. Taylor, Guide Gard. Shrubs & Trees 341. 1965; Ohwi, Fl. Jap. 764. 1965; Hellyer, Shrubs in Colour, pr. 1, 20 (1965) and pr. 2, 20. 1966; Moldenke, Phytologia 15: 27--41. 1967; Moldenke, Résumé Suppl. 15: 10, 11, 14, & 17. 1967; E. Hyams, Ornam. Shrubs Temp. Zone 5: 27. 1967; Hocking, Excerpt. Bot. A.11 (6): 503. 1967.

Additional illustrations: Kitamura & Okamoto, Col. Illustr. Trees & Shrubs Japan pl. 65 [in color]. 1960; Krüssmann in Encke, Pareys Blumengärtn., ed. 2, 2: 445. 1960;

Hellyer (1966) places the binomial, C. arnoldiana Keisey, in the synonymy of C. japonica, but it actually belongs in that of C. bodinieri var. giraldii (Hesse) Rehd., as has been pointed out by me previously. Beissner, Schelle, & Zabel (1903) place C. longifolia Lam. and C. longifolia subglabrata Schau. in the synonymy of C. japonica, but this, in my opinion, is unjustified. The two taxa are abundantly distinct. They call the species "japanische Schönfrucht".

The C. purpurea ascribed to "Hort." ex Lemaire is actually C. longifolia Lam., that ascribed to Van Houtte and to "Hort." ex Moldenke is C. rubella Lindl., while that proposed by A. L. Jussieu is C. dichotoma (Lour.) K. Koch.

Taylor (1965) describes the corollas of C. japonica as "white or pink" and maintains that the plant is hardy from Life Zone 5 southward in the United States. Hyams (1967) tells us that the leaves turn "pale red" before falling in the autumn and that the species was introduced into cultivation from Japan in 1845 [actually in 1841].

Lewis (1961) reports the diploid chromosome number as 16 and 18, but suggests that 18 is the correct figure. Nakai (1923) cites a "Nakai, Isl. Wangto 13 & 24", but I have not yet been able to trace this reference.

The Herb. St. Petersburg s.n., Matsuki 172, J. Matsumura s.n. [Tokio, June 29, 1879], and C. Wright s.n. [Kiusiu], distributed as C. japonica, are all actually var. luxurians Rehd., while

Takeuchi 14 and Zimmermann 210 are var. rhombifolia H. J. Lam.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshiu: Savatier s.n. [Yokoska] (W--2496743).

CALLICARPA JAPONICA f. ALBIBACCA Hara

Additional synonymy: Callicarpa japonica fructo-albo Hort. ex Beissner, Schelle, & Zabel, Handb. Laubh. 425, nom. nud. 1903. Callicarpa japonica cv. "Albibacca" Krüssmann in Encke, Pareys Blumengärtn., ed. 2, 2: 445. 1960. Callicarpa japonica cv. "Leucocarpa" Krüssmann in Encke, Pareys Blumengärtn., ed. 2, 2: 445, in syn. 1960.

Additional bibliography: Beissner, Schelle, & Zabel, Handb. Laubh. 425. 1903; Krüssmann, Handb. Laubgeh. 1: 255. 1959; Moldenke, Phytologia 15: 34--36. 1967; Moldenke, Résumé Suppl. 15: 17. 1967.

Krüssmann (1960) comments "Früchte weiss; in Aussaaten immer wieder auftretend".

CALLICARPA JAPONICA f. ALBIFLORA Moldenke

Additional bibliography: Moldenke, Phytologia 15: 21 & 36. 1967; Moldenke, Résumé Suppl. 15: 10. 1967; Hocking, Excerpt. Bot. A.11 (6): 503. 1967.

CALLICARPA JAPONICA var. ANGUSTATA Rehd.

Additional bibliography: Chun, Sunyat. 1: 303. 1934; Krüssmann in Encke, Pareys Blumengärtn., ed. 2, 2: 445. 1960; Moldenke, Phytologia 15: 36--41. 1967; Moldenke, Résumé Suppl. 15: 17. 1967.

The C. longifolia Hance, referred to in the synonymy of this variety, should be dated "1890", rather than "1932", while that accredited to Bentham should be dated "1962", not "1966".

CALLICARPA JAPONICA var. ERYTHROCARPA Sieb., Jaarb. Konink. Nederl. Maatschap. Aanmoed. Tuinb. 1845: 71, pl. 6 [as "varieteit α C. erythrocarpa"]. 1845; Moldenke, Prelim. Alph. List Invalid Names 10. 1940.

Synonymy: Callicarpa erythrocarpa Sieb., Jaarb. Konink. Nederl. Maatschap. Aanmoed. Tuinb. 1845: 71, pl. 6. 1845. Callicarpa japonica α C. erythrocarpa Sieb. apud Rehd., Bibl. Cult. Trees 584. 1949.

Bibliography: Sieb., Jaarb. Konink. Nederl. Maatschap. Aanmoed. Tuinb. 1845: 71, pl. 6. 1845; Moldenke, Prelim. Alph. List Invalid Names 10. 1940; Moldenke, Alph. List Invalid Names 9. 1942; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 58 & 87 (1942) and ed. 2, 133 & 177. 1949; Rehd., Bibl. Cult. Trees 584. 1949; Moldenke, Résumé 172, 243, 244, & 444. 1959; Moldenke, Phytologia 14: 254. 1967.

Illustrations: Sieb., Jaarb. Konink. Nederl. Maatschap. Aanmoed. Tuinb. 1845: pl. 6. 1845.

This variety differs from the typical form of the species in

having its fruits, young branchlets, and petioles purpurascent and the leaf-blades narrower and cuspidate at the apex.

Siebold's original (1845) description in Dutch and in Latin is "Met purpurrode bessen jonge takken en bladstelen, met smallere fijnpuntige bladen (baccis ramulis junioribus petiolisque purpurascentibus, foliis angustioribus cuspidatis)". Rehder (1949) reduces it to synonymy under typical C. japonica Thunb.

It is known to me only from the original description.

CALLICARPA JAPONICA var. GLABRA Nakai, Journ. Jap. Bot. 14: 640—641. 1938.

Bibliography: Nakai, Journ. Jap. Bot. 14: 640—641. 1938; Moldenke, Résumé Suppl. 15: 11. 1967.

This variety differs from the typical form of the species in having shiny branches, the leaf-blades elliptic or rhomboid-elliptic to oblong, crenulate-serrulate along the margins, completely glabrous or sparsely and minutely papillose along the midrib above and resinous-punctulate on both surfaces, and the inflorescences glabrous.

The type of the variety was collected by Takanoshin Nakai (no. 13414) in woods at Tyôzankan, province of Kôkai, Korea. Nakai records the common name "teriha-murasakisikibu" for it.

The taxon is known to me only from the literature. The C. japonica f. glabra P'ei is apparently synonymous with typical C. japonica Thunb., and it may very well be that Nakai's variety belongs there, too.

CALLICARPA JAPONICA f. GROSSIDENTATA Nakai, Journ. Jap. Bot. 14: 640. 1938.

Synonymy: Callicarpa japonica f. rhomb. grossident. Miq., Cat. Mus. Bot. Lugd.-Bat. 70, nom. nud. 1870. Callicarpa japonica f. grossidentata Miq. ex Moldenke, Résumé 243, in syn. 1959.

Bibliography: Miq., Cat. Mus. Bot. Lugd.-Bat. 70. 1870; Nakai, Bot. Mag. Tokyo 40: 492. 1926; Nakai, Journ. Jap. Bot. 14: 640. 1938; Hara, Enum. Sperm. Jap. 1: 183. 1948; Moldenke, Résumé 243. 1959; Moldenke, Résumé Suppl. 15: 11 & 17. 1967.

This form differs from the typical form of the species in having the leaves of flowering branches with their blades rhombic or elliptic, caudate-attenuate at the apex, and coarsely and acutely or irregularly subsinuate-dentate along the margins.

Nakai designated no type, but based the taxon on the five following specimens: (1) Nakai 13413, collected in pine woods at Tyôzankan, province of Kôkai, Korea, on August 4, 1929, (2) Nakai 8161, collected in rocky places at Kaigammen in the Tatuzyô region, province of Keihoku, Korea, on July 8, 1919, (3) Nakai s.n., collected on Mt. Tiisan, province of Zennan, Korea, on June 29, 1913, (4) Isidoya & Tei-Daigan 3688, collected on Mt. Mongansan, on Daikokuzantô Island, province of Zennan, Korea, on August 25, 1919, and (5) Nakai 12071, collected at Siyôri, on Kaitô Island, province of Zennan, Korea, on May 22, 1928 — the last two local-

ities being in the Korean Coastal Islands. Nakai records the vernacular name "nokome-murasakisikibu". The Hara (1948) reference in the bibliography is sometimes incorrectly cited as "p. 184".

Miquel (1870) cites Siebold 7 [specimens?] and Bürger 1 [specimen?] for this form. It is known to me only from the literature.

CALLICARPA JAPONICA f. KIIRUNINSULARIS Masam., Trans. Nat. Hist. Soc. Formos. 30: 63—64. 1940.

Synonymy: Callicarpa japonica var. luxurians Masam., Suzuki, & Mori apud Masam., Trans. Nat. Hist. Soc. Formos. 30: 64, in syn. 1940 [not C. japonica var. luxurians Rehd., 1916]. Callicarpa japonica f. kuruninsularis Masam. ex Li, Woody Fl. Taiwan 822 & 944, sphalm. 1963.

Bibliography: Masam., Suzuki, & Mori, Trans. Nat. Hist. Soc. Formos. 24: 411. 1934; Masam., Trans. Nat. Hist. Soc. Formos. 30: 63—64. 1940; Woody Fl. Taiwan 822 & 944. 1963; Moldenke, Résumé Suppl. 8: 3. 1964; Moldenke, Phytologia 15: 31. 1967.

This form differs from the typical form of the species in having its leaf-blades coriaceous-chartaceous, ovate-lanceolate, about 5 cm. long and 2 cm. wide, acuminate at the apex, and acuminate-cuneate at the base.

The type of the form was collected by Genkei Masamune, Sigetaka Suzuki, and Mosamu Mori (no. 106) at Kiirun-to, Kiirun, Taihoku-syū, Formosa, on July 15, 1934, and is deposited in the herbarium of the University of Tokyo. The vernacular name, "kiirun-murasakisikibu", is recorded for it by Masamune.

The taxon is known to me only from the literature.

CALLICARPA JAPONICA var. LUXURIANS Rehd. in C. S. Sarg., Pl. Wils. 3: 369. 1916 [not C. japonica var. luxurians Masam., Suzuki, & Mori, 1934].

Synonymy: Premna staminea Maxim., Bull. Acad. Imp. Sci. St. Pétersb. 31: 80. 1886. Callicarpa japonica f. latifolia Miq., Cat. Mus. Bot. Lugd.-Bat. 70, nom. nud. 1870. Callicarpa japonica f. rugosior Miq., Cat. Mus. Bot. Lugd.-Bat. 70, nom. nud. 1870. Callicarpa kotoensis Hayata, Journ. Coll. Sci. Imp. Univ. Tokyo 30 (1): [Mat. Fl. Formos.] 219. 1911. Callicarpa shikokiana Nakai, Fl. Sylv. Korean. 14: 31, in syn. 1923 [not C. shikokiana Mak., 1892]. Callicarpa japonica Matsumura ex Nakai, Fl. Sylv. Korean. 14: 31, in syn. 1923 [not C. japonica Hort., 1866 & 1936, nor L. f., 1966, nor Thunb., 1784, nor "Thunb. auct.", 1838]. Callicarpa japonica Miq. apud Nakai, Trees & Shrubs Indig. Jap., ed. 2, 1: 455, in syn. 1927. Callicarpa kotoensis Hayata apud Stapf, Ind. Lond. 1: 526. 1929. Callicarpa japonica var. kotoensis (Hayata) Masamune, Trans. Nat. Hist. Soc. Formos. 30: 63. 1940. Callicarpa japonica subsp. luxurians (Rehd.) Masamune & Yanagihara, Trans. Nat. Hist. Soc. Formos. 31: 323. 1941. Callicarpa japonica subsp. luxurians (Rehd.) Masamune ex Moldenke, Ré-

sumé 244, in syn. 1959. Callicarpa longifolia "sensu Li" ex Hatusuma, Mem. Fac. Agr. Kagoshima Univ. 5 (3): 47, in syn. 1966 [not C. longifolia Auct., 1965, nor Benth., 1966, nor Blume, 1936, nor Diels, 1916, nor Hance, 1932, nor Hemsl., 1916, nor Hook., 1932, nor L., 1820, nor Lam., 1783, nor Roxb., 1827, nor Vahl, 1936, nor "sensu Hemsl.", 1949, nor "sensu Mori", 1962].

Bibliography: Miq., Cat. Mus. Bot. Lugd.-Bat. 70. 1870; Maxim., Bull. Acad. Imp. Sci. St. Pétersb. 31: 80. 1886; J. Matsumura, Bot. Mag. Tokyo 13: 115. 1889; Hayata, Journ. Coll. Sci. Imp. Univ. Tokyo 30 (1): [Mat. Fl. Formos.] 219. 1911; Hayata, Icon. Pl. Formos. 2: 125, pl. 35. 1912; J. Matsumura, Ind. Pl. Jap. 2 (2): 529. 1912; Nakai, Veg. Isl. Quelp. 76. 1914; Rehd. in C. S. Sarg., Pl. Wils. 3: 369. 1916; Prain, Ind. Kew. Suppl. 5, pr. 1, 43. 1921; Nakai, Fl. Sylv. Korean. 14: 31 & 133, pl. 8. 1923; Nakai in Nakai & Koidz., Trees & Shrubs Indig. Jap., ed. 2, 454—455, fig. 215. 1927; T. Itô, Taiwan Shokubutsu [Illustr. Formos. Pl.] 7, pl. 604. 1927; S. Sasaki, List Pl. Formos. 350. 1928; Stapf, Ind. Lond. 1: 526. 1929; Masam. & Suzuki, Ann. Rep. Taih. Bot. Gard. 3: 66. 1933; Masam., Fl. & Geo. Yakus. 387. 1934; Kanehira, Formos. Trees, ed. 2, 644, fig. 600. 1936; K. Mori in Masam., Short Fl. Formos. 179. 1936; Nakai in Shirasawa, Icon. Essenc. Forest. Jap. 2: fig. 2481. 1938; Masam., Trans. Nat. Hist. Soc. Formos. 30: 63—64. 1940; Masam. & Yanagihara, Trans. Nat. Hist. Soc. Formos. 31: 323. 1941; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 57, 58, 61, & 87. 1942; Hara, Enum. Sperm. Jap. 1: 184. 1948; Moldenke, Castanea 13: 121. 1948; Moldenke, Alph. List Cit. 2: 602. 1948; Hatusima, Journ. Jap. Bot. 24: 81. 1949; Moldenke, Alph. List Cit. 4: 1104. 1949; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 133, 140, 157, & 177. 1949; Moldenke, Phytologia 3: 139 (1949), 3: 380 (1950), 3: 462 (1951), and 5: 28, 100, & 101. 1954; Moldenke, Journ. Calif. Hort. Soc. 15: 86. 1954; Mizushima, Misc. Rep. Research Inst. Nat. Res. 38: 123. 1955; Mizushima & Mori, Misc. Rep. Research Inst. Nat. Res. 48: 77. 1958; Moldenke, Résumé 171, 172, 181, 213, 244, & 444. 1959; Moldenke, Résumé Suppl. 1: 13. 1959; Prain, Ind. Kew. Suppl. 5, pr. 2, 43. 1960; Moldenke, Résumé Suppl. 3: 18—21 (1962) and 4: 8. 1962; Hatusima, Mem. South. Indust. Sci. Inst. Kagoshima Univ. 3 (1): 31. 1962; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1206, pl. 1014. 1962; Li, Woody Fl. Taiwan 821. 1963; Ohwi, Fl. Jap. 764. 1965; Hatusima, Mem. Fac. Agr. Kagoshima Univ. 5 (3): 47. 1966; Moldenke, Résumé Suppl. 14: 4 & 7. 1966; Moldenke, Phytologia 14: 43, 59, & 156 (1966), 14: 254 & 256 (1967), and 15: 30—32 & 39. 1967; Moldenke, Résumé Suppl. 15: 17. 1967.

Illustrations: Hayata, Icon. Pl. Formos. 2: pl. 35. 1912; Nakai, Fl. Sylv. Korean. 14: pl. 8. 1923; T. Itô, Taiwan Shokubutsu Dzusetsu [Illustr. Formos. Pl.] pl. 604. 1927; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 454, fig. 215. 1927; Kanehira, Formos. Trees, ed. 2, fig. 600. 1936; Nakai in Shiriasawa, Icon. Essenc. Forest. Jap. 2: fig. 2481. 1938; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: pl. 1014. 1962.

This variety differs from the typical form of the species in having the branches robust, the leaves larger, thicker, and rather lustrous above, their petioles to 3 cm. long and their blades ovate-elliptic or ovate, 10—20 cm. long and 4--10 cm. wide, serrulate along the margins, the inflorescence broad, the cymes larger and with thicker branches, the corolla including the lobes 4--5 mm. long, the anthers 2.5 mm. long, and the fruit 5—6 mm. in diameter.

The type of this variety was collected by Père Emile Joseph Taquet (no. 4092) "in insula Septlum", Quelpart Island, Korean Coastal Islands, on July 31, 1910, and is deposited in the herbarium of the Arnold Arboretum at Cambridge, Massachusetts. Rehder's original description is "A type recedit ramulis plus minusve pallide lenticellatis, foliis majoribus ovate-ellipticis v. ovatis acuminatis basi late cuneatis v. e basi rotundata subito in petiolum productis dentatis dentibus triangularibus v. latissime triangularibus 10—18 cm. longis et 4.5--10 cm. latis, petiolis 1--2.5 cm. longis, pedunculis petiolis paullo brevioribus.....This variety with large membranous leaves up to 18 cm. long is apparently only a luxuriant form owing its origin to the moist subtropical climate of the islands where it grows." He cites, in addition to the type, Taquet 912, 3083, & 4097 from Quelpart, Faurie 4047 from Oshima, and C. Wright s.n. from Kiushiu.

Collectors describe this plant as a weak, slender, or scandent shrub, or erect, a subshrub, or a small tree, 1.5—4 m. tall, the stem 1.5 inches in diameter at breast height; the leaves membranous or leathery, slightly glossy or deep-green and glossy above, yellowish-green and opaque beneath, the flowers fragrant, and the fruit globose, glossy, purple or "beautiful purple" to violet or deep-violet. The corolla is described as "whitish" on F. R. Fosberg 38067, "lilac" on F. R. Fosberg 38298, "lavender" on F. R. Fosberg 37857 & 37869, Walker, Sonohara, Tawada, & Amano 6993, and Walker & Tawada 6511, "pale-lavender" on F. R. Fosberg 37066, "pale purple-violet" on Matsuki 172, and "yellow" on Conover 1019. Matsuki reports that the young leaves may be eaten.

The variety has been found growing in thickets in ravines, woods, forests, thicket margins, the edge of shrine forests, on rough limestone in lowland thickets, steep slopes above the sea, seashore cliffs, and clay soil with coarse grass and shrubs, at the inner edge or back of beaches, among scrub on beach ridges, and local on large limestone boulders or remnants in scattered grasslands, at altitudes of sea-level to 50 meters, flowering from May to August and October, fruiting in March, July, October, and November. Kobayashi refers to it as "common" on Oshima and Matsuki calls it "common" on Honshiu, but Fosberg reports that it is only "occasional" on Ishigaki and Miyako. Mizushima (1955) avers that it is "Uncommon in and on the margins of forests". Nakai (1923) gives its general distribution as Quelpart, Dagelet, Ryukiu Islands, Kiushiu, Shikoku, and Honshiu. Ohwi (1965) tells us that in Japan it inhabits "Lowlands near the sea; Honshu, Shi-

koku, Kyushu; rather common". Mizushima & Mori (1958) say that "A form approaching var. luxurians Rehd. is often found near seashores" on the Shimokita Peninsula in Aomori Prefecture.

Vernacular names recorded for the variety are "bigleaf Japanese beautyberry", "do-murasakishikibu", "koto-murasakisikibu", "kôtô-murasaki", "murasakishikibu", "murasaki-shikimu", "omurasakishikibu", "o-murasakishikibu", "ô-murasakishikibu", and "ô-murasaki-shikibu".

The original description of Premna staminea (1886) is as follows: "Innovans tomento stellato incana cito glabrata, foliis membranaceis ellipticis v. oblongo-ellipticis utrinque attenuatis basi sensim in petiolum brevem, versus apicem argute serrulatis, cyma composita plana laxa, pedicellis calyce glabro truncato 4-nervi longioribus, corollae extus tomentellae intus glabrae calycem 3--10 superantis tubo late subturbinato limbum patulum 4-lobum subsuperante lobis rotundatis 2 superioribus majoribus tenuioribus, staminibus aequalibus basi tubi insertis corollam subduplo excedentibus, antheris amplis oblongis punctis aureo-glandulosis adspersis, stylo tenui longiore stigmatis lobis 2 rotundatis conniventibus, ovario 2-loculari. Liukiu (Tanaka flor). Antherae forma et corollae lobis subaequalibus inter omnes notas excellens et anomala. Ramus ante oculos cortice laeviusculo albidoochraceo. Folia maxima petiolo 7 mm., lamina 100: 45 mm. concolore utrinque subquinquecostata costis arcuatis reticuloque distincto subtus vix prominulis sed obscurioribus, folia minora petiolo 5 mm., lamina 50: 20--25 mm. Calyx 2 mm. latus et longus. Corolla 9 mm., genitalia exserta totidem."

Nakai (1923), Hara (1948), and Ohwi (1965) reduce C. australis Koidz. to synonymy under C. japonica var. luxurians, and this disposition may very well prove to be correct. On the other hand, Liu (1962) reduces C. antaoensis Hayata to synonymy here, but I regard it as C. longifolia Lam. Hatusima (1966) reduces C. kotoensis Hayata, C. japonica var. kotoensis (Hayata) Masamune, and C. longifolia "sensu Li" to synonymy under C. denticulata Merr., but with this disposition of these names I cannot agree!

Li (1963) reduces C. kotoensis Hayata and C. japonica var. kotoensis (Hayata) Masamune to synonymy under C. longifolia Lam. He notes "Hayata says of his C. kotoensis as 'near C. pilocalyx Clark and C. longifolia Lamk., but differs from both by the larger flowers and less hairy leaves'. When compared with large series of C. longifolia specimens from all over tropical Asia, the Lanyu plant cannot be specifically separated." He cites from Lanyu Island: Kawakami & Sasaki 37 & 38, Miyake s.n., and Takano s.n.

The C. longifolia credited to Blume and to Vahl in the synonymy above is a synonym of the valid species, C. longifolia Lam., that credited to "Auct.", to Linnaeus, and to Roxburgh is C. longifolia f. floccosa Schau., that credited to Bentham, to Hance, and to "sensu Mori" is C. longissima (Hemsl.) Merr., that credited to

Hooker is C. brevipes (Benth.) Hance, that credited to Diels is C. bodinieri var. giraldii (Hesse) Rehd., that credited to "sensu Hemsl." is C. japonica var. angustata Rehd., while that credited to Hemsley is in part C. bodinieri var. giraldii and in part C. japonica var. angustata. The Maximowicz reference (1886) cited above is sometimes erroneously cited "32: 80. 1887".

Nakai (1923) says of var. luxurians "Hab. in Quelpaert et Dagelet. Distr. Liukiu, Kiusiu, Shikoku et Hondo". Hatusima (1949) records it from the Daito Islands and cites Kawagoe s.n. from Daito Island and from Iriomote Island.

Masamune (1940) cites the following specimens: KIZAN ISLAND [Formosa]: Masamune & Suzuki s.n. [Taihoku-syu, VII.3.1932]. OKINAWAN ISLANDS: Iheyashima: Suzuki 2530. AMAMI ISLANDS: Amamioshima: Ohba 90. SAKOSHIMA ISLANDS: Iriomote: Masamune 2527. Miyazakiken: Matuda 2819. Masamune also cites Hosokaya 8053 from Koto-syo Island, deposited in the Tokyo University herbarium.

Material has been misidentified and distributed in herbaria as typical C. japonica Thunb. On the other hand, the Sawada s.n. [Province of Sagami], distributed as var. luxurians, is actually C. bodinieri var. giraldii (Hesse) Rehd., Hurusawa 14-I is C. japonica Thunb., and E. H. Wilson 9543 is C. japonica var. rhombifolia H. J. Lam.

For his f. rugosior Miquel (1870) cites Bürger 3 [specimens?] and Siebold 1 [specimen?] and for his f. latifolia he cites only Siebold 1 [specimen?].

In all, 63 herbarium specimens and 5 mounted photographs have been examined by me.

Citations: CHINA: Kiangsi: Ip s.n. [Herb. Univ. Nanking 1402] (Io—114021). KOREA: In-Cho 1095 (Mi), 1097 (Mi), 3364 (Mi), 3466 (Mi); In-Cho's Collector 9516 (Mi); Yongsok 7931 (Mi), 8098 (Mi, Mi). KOREAN COASTAL ISLANDS: Botel Tobago: Kanehira s.n. [June 5, 1919] (N—photo, Ph, Z—photo). Koto-syo: Hosokawa 8053 (Bi); Kanehira & Sasaki s.n. [5.VIII.1919; Herb. Nat. Taiwan 20989] (W—photo). Quelpart: In-Cho 1099 (Mi, Mi), 1100 (Mi); Yongsok 8730 (Mi), 8752 (Mi). Ullong: Yongsok 2415 (Mi), 2560 (Mi), 5957 (Mi), 5961 (Mi), 6303 (Mi). WESTERN PACIFIC ISLANDS: JAPAN: Enoshima: Sawada s.n. [12 Jun. 1927] (S, S). Hokkaido: Maximowicz s.n. [Hakodate, 1861] (C, S, W—9066). Honshiu: Matsuki 172 (W—2337826); J. Matsumura s.n. [Tokio, June 29, 1879] (W—147601); Y. Matsumura 3349 (N); Mizushima 14-1-A (W—2037867); Numata 36 (Ws). Kiushiu: Masamune s.n. [prov. Osumi, Aug. 30, 1927] (N); C. Wright s.n. [Kiusiu] (W—9970). Oshima: Kobayashi 15073 (S); Miyabi & Tokubuchi s.n. [prov. Oshima, July 17, 1890] (N). Island undetermined: Dahlstrand s.n. [Mine, 22/11/1954] (Go); Herb. Lugd.-Batav. s.n. [Japonia] (S); Herb. Mus. St. Petersburg s.n. (W—9965); Oldham 621 (T). RYUKYU ISLAND ARCHIPELAGO: SATSU-

NAN ISLANDS: Takeshima: Tagawa & Motozi 1817 (Ws). OKINAWAN ISLANDS: Okinawa: Amano 6034 (N, W—2036164), 6360 (W—2070886), 6941 (W—2070927); Conover 1019 (W—1993147), 1035 (W—1993150); Kawagoe s.n. [Aug. 8, 1913] (W—2071332); R. Moran 5076 (Ca—78428); Walker, Sonohara, Tawada, & Amano 6993 (N); Walker, Tawada, & Amano 5820 (N). SAKISHIMA ISLANDS: Iriomote: F. R. Fosberg 37763 (Sm); Murayama s.n. [Anno 1927] (W—2071199); Walker & Tawada 6511 (W—2093799). Ishigaki: F. R. Fosberg 37066 (Sm), 37857 (Sm), 37869 (Z), 38067 (Sm). Miyako: F. R. Fosberg 38298 (Sm). NANPO ISLANDS: Aogashima: Mizushima 2641 (S). Hachijo: Suzuki 24 [Herb. Suzuki 391072] (Ca—793437), 217 [Herb. Suzuki 391072] (W—1994837). CULTIVATED: California: Walther s.n. [Bard's place, June 16, 1921] (Gg—31981). Germany: Herb. Mus. Bot. Berol. s.n. [hort. bot. Berol. 14.X.20] (B).

CALLICARPA JAPONICA f. MAJOR Nakai, Journ. Jap. Bot. 14: 639—640. 1938.

Bibliography: Nakai, Journ. Jap. Bot. 14: 639—640. 1938; Moldenke, Résumé Suppl. 15: 11. 1967.

This form differs from the typical form of the species in having the branches more slender, the leaf-blades papyraceous, those of the flowering branches oblong or obovate, 10—12.5 cm. long, 4.5—6 cm. wide, cuneate or obtuse at the base, rather obtusely cuspidate or subcaudate at the apex with the cusp entire, those of the lateral branchlets shorter than in the typical form, the inflorescence abbreviated and congested. In the form of the leaf it resembles var. luxurians Rehd., but the branches are more slender, the leaf-blades papery, and the inflorescence shorter.

The cotypes of this form were collected by Takanoshin Nakai on the island of Taiseitô, Korean Coastal Islands — no. 13409 in the province of Kôkai on July 26, 1929, and no. 12069 on Mt. Hakuyôzan, in the Tyozyô region, province of Zenman, on June 4, 1928. A vernacular name recorded for the plant is "usubamurasakisikibu". The taxon is known to me only from the literature.

CALLICARPA JAPONICA var. MICROCARPA Nakai, Bot. Mag. Tokyo 40: 492. 1926.

Bibliography: Nakai, Bot. Mag. Tokyo 40: 492. 1926; Hara, Enum. Sperm. Jap. 1: 184. 1948; Moldenke, Phytologia 3: 295. 1950; Moldenke, Résumé 172 & 444. 1959.

This variety differs from the typical form of the species in having the leaf-blades obovate, 8—12 cm. long, 2.5—4.5 cm. wide, long-caudate-attenuate at the apex, obscurely serrate along the margins, cuneate-attenuate at the base, and the fruits small, purple, 1.5—2.5 mm. wide.

The type of the variety was collected by Takanoshin Nakai in the province of Shimotsuke, Honshiu, Japan, without number, and is deposited in the herbarium of the University of Tokyo.

The taxon is known to me only from the literature.

CALLICARPA JAPONICA var. RHOMBIFOLIA H. J. Lam, Verbenac. Malay. Arch. 85. 1919.

Synonymy: Callicarpa rhynchophylla Miq., Fl. Ind. Bat. 2: 888. 1856. Callicarpa japonica f. rhombifolia Miq. ex Nakai, Journ. Jap. Bot. 14: 640. 1938.

Bibliography: Miq., Fl. Ind. Bat. 2: 888. 1856; Miq., Ann. Mus. Bot. Lugd.-Bat. 2: 98. 1865; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 386. 1893; H. J. Lam, Verbenac. Malay. Arch. 85. 1919; Bakh. in Lam & Bakh., Journ. Jard. Bot. Buitenz., ser. 3, 3: 26. 1921; Nakai, Journ. Jap. Bot. 14: 640 & 641. 1938; Moldenke, Prelim. Alph. List Invalid Names 12. 1940; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 65 & 87. 1942; Moldenke, Alph. List Invalid Names 10. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 386. 1946; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 146 & 177. 1949; Moldenke, Phytologia 4: 75, 82, & 88. 1952; Moldenke, Résumé 172, 193, 213, 246, 427, & 444. 1959; Moldenke, Résumé Suppl. 1: 12. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 386. 1960; Moldenke, Résumé Suppl. 13: 5 (1966) and 14: 3. 1966; Moldenke, Phytologia 14: 59 & 167 (1966), 14: 254 (1967), and 15: 28 & 32. 1967; Moldenke, Résumé Suppl. 15: 17. 1967.

This variety differs from the typical form of the species in having the leaves on its flowering branches short-petiolate, dilated, obtusely rhombic or broadly elliptic, and equally serrate along the margins.

The type of the variety was collected by Pieter Willem Korthals somewhere in Borneo and is deposited in the Rijksherbarium at Leiden as sheet number 908.263—29. The type of C. rhynchophylla is apparently the same unnumbered Korthals collection, but the specimen is deposited in the herbarium of the Botanisch Museum at Utrecht as sheet number 049890. Callicarpa japonica f. rhombifolia is based on three collections: (1) Nakai 13411 from pine woods at Tyôzankan, in the province of Kôkai, Korea, collected on August 4, 1929, (2) R. K. Smith 442 from Mt. Tyôzyusan, in the same province, collected in 1930, and (3) Nakai 12072 bis from Mugisima Island, in the province of Keinan, collected on May 4, 1928.

Miquel (1856) describes his C. rhynchophylla as follows: "Innovationes stellato-tomentoso-albidae, adulta fructufera undique fere glabra, ramuli tenues, folia brevissime petiolata e basi magis minusve cuneata integerrima lato- vulgo rhombeo-elliptica acute grossiuscule concinne dentato-serrata, in acumen longum lineari-lanceolatum acutum integerrimum abrupte terminata, 4 1/2 — 2 1/2 poll. longa, chartacea, adultiora supra in nervis pube brevissima scabriuscula adspersa, subtus glabra glandulis luteis crebro punctata, costulis venosis teneris parallelis notata, cymae axillares brevi-pedunculatae breves subdensiflorae, calyx cupularis brevissime 4-calloso-mucronulatus, drupae (immaturae) obovoideae."

Lam (1919) describes the variety as follows: "folia latiora, rhomboidea, basi late cuneata, margine usque ad dimidium folii integra, ceterum praeter acumen grosse serrato-dentata, apice abrupte

acuminata, acumine 2 cM. longo, integro, obtusiusculo, nervis secundariis utrinque 7—9; 4—9 cM. longa, 5 1/2 cM. lata; petiolo 0.2—0.3 cM.; cymi trichotomi, pedunculo gracili, 0.7 cM. longo.. Probably the form with 'wider leaves, less acute base, often rhomboid, and with 9 nerves on each side of the midrib' is identical with our var. β, which is also Miquel's C. rhynchophylla."

Collectors describe this plant as a bush or small shrub, 3—15 feet tall, branching irregularly, the crown 25 feet in circumference, and the fruit deep-pink or purple. It has been found growing on rocky slopes, along roadsides, in flats of streambeds, and in full sun on hillsides near the sea, at altitudes of near sea-level to 660 meters, flowering from June to August, fruiting in March, August, October, and November. The corolla is described as "white" on Chiao 2617 and as "purple" on J. F. C. Rock 9195 and E. H. Wilson 10411. Wilson refers to the plant as "common in thickets" and as "not common near waterfalls" in Korea. Vernacular names reported for it are "maruba-murasakisikibu" and "murasaki shikibu". The specimens cited below as Herb. Hort. Tjibodasensis J.20 [and probably the other numbers from this garden] were taken from plants grown from seeds originally obtained from Japan.

The printed label on E. H. Wilson 9262 says "Japan", but my friend and colleague, Dr. Tetsuo Koyama, assures me that the locality given on the label as the actual place of collection is in Korea, not Japan.

Bakhuizen van den Brink (1921) places C. rhynchophylla in the synonymy of C. longifolia Lam., a disposition which I cannot follow.

Material has been misidentified and distributed in herbaria under the names C. dichotoma (Lour.) K. Koch, C. giraldiana Hesse, C. japonica Thunb., C. mollis Sieb. & Zucc., C. zollingeriana Schau., "Callicarpa var. luxurians Rehd.", and Caryopteris sp.

In all, 34 herbarium specimens, including type material of all the names involved, and 2 mounted photographs have been examined by me.

Citations: CHINA: Hupeh: E. H. Wilson 439 [6/07] (W—777043), 439 [10/07] (W—777043). Shantung: Chiao 2617 (B, Ca—480124, Gg—193269, N, N, S, W—1553781, W—1575913); Zimmermann 210, in part (S, W—795356). Yünnan: J. F. C. Rock 9195 (Ca—327974, W—1332124). KOREA: Mrs. R. K. Smith s.n. [8-10-1937] (W—1756660), s.n. [8-20-1938] (W—1756661); E. H. Wilson 9262 (W—1054181, W—1054182), 9543 (W—1054202), 10411 (W—1052226); Yongsok 9049 (Mi). WESTERN PACIFIC ISLANDS: JAPAN: Honshiu: Takeuchi 14 (W—2073698). Jesso: Albrecht s.n. [1861] (C). RYUKYU ISLAND ARCHIPELAGO: OKINAWAN ISLANDS: Okinawa: Conover 1140 (Bi); Field & Loew 21w (Ca—745252, Mi, W—1942625). INDONESIA: GREATER SUNDA ISLANDS: Borneo: Korthals s.n. (N—photo of isotype, Ut—49890—isotype, Z—photo of isotype). CULTIVATED: France: Herb. Hort. Huber 735 (M). Java: Herb. Hort. Tjibodensis J.20 (Bz—17647,

Bz—26486), P (Bz—26487), Q (Bz—26488, Bz—26489).

CALLICARPA JAPONICA var. TAQUETII (Léveillé) Nakai, Trees & Shrubs Japan, ed. 1, 336. 1922.

Synonymy: Callicarpa taquetii Léveillé in Fedde, Repert. Spec. Nov. 12: 182. 1913. Callicarpa japonica var. taquetii Nakai, Fl. Sylv. Korean. 14: 31. 1923.

Bibliography: Léveillé in Fedde, Repert. Spec. Nov. 12: 182. 1913; Prain, Ind. Kew. Suppl. 5, pr. 1, 44. 1921; Nakai, Trees & Shrubs Indig. Jap., ed. 1, 336. 1922; Nakai, Fl. Sylv. Korean. 14: 31 & 133, pl. 7. 1923; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 454. 1927; Rehd., Journ. Arnold Arb. 15: 324. 1934; Terazaki, Suppl. Illustr. Fl. Jap. fig. 2482. 1938; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Hara, Enum. Sperm. Jap. 1: 184. 1948; Rehd., Bibl. Cult. Trees 583. 1949; Moldenke, Phytologia 3: 380. 1950; Moldenke, Résumé 171, 244, 247, & 444. 1959; Prain, Ind. Kew. Suppl. 5, pr. 2, 44. 1960; Moldenke, Phytologia 14: 162 & 167 (1966) and 14: 254. 1967.

Illustrations: Nakai, Fl. Sylv. Korean. 14: pl. 7. 1923; Terazaki, Suppl. Illustr. Fl. Jap. fig. 2482. 1938.

This variety differs from the typical form of the species in having slender branches, smaller leaves, and fewer-flowered inflorescences.

Rehder (1934 & 1949) reduces this taxon to synonymy under C. dichotoma (Lour.) K. Koch, and this may very possibly be correct. I have seen no authentic material of it as yet and therefore hesitate to reduce it. Nakai (1923) records it from Quelpart Island, central Korea, and western Hondo. He notes that "Planta majora sensim in typicam transit". In his 1927 work he cites C. taquetii to page "192" in error. Vernacular names recorded for the plant are "koba-murasakishikibu" and "koba-murasishikibu". The In-Cho 1104, distributed as this variety, is actually typical C. dichotoma (Lour.) K. Koch.

The taxon is known to me thus far only from the literature.

CALLICARPA KINABALUENSIS Bakh. & Heine ex Heine in Fedde, Repert. Spec. Nov. 54: 246. 1951.

Synonymy: Callicarpa kinabaluënsis Bakh. ex Moldenke, Phytologia 4: 42—43. 1952. Callicarpa kinabakuensis Bakh. ex Moldenke, Résumé 244, in syn. 1959. Callicarpa kinabaluensis Bakh. ex Moldenke, Résumé 244, in syn. 1959. Callicarpa kinabaluënsis Bakh. & Heine ex Moldenke, Résumé 444. 1959.

Bibliography: Heine in Fedde, Repert. Spec. Nov. 54: 246. 1951; Moldenke, Phytologia 3: 463 (1951) and 4: 42—43, 81, 82, 123, & 127, 1952; Moldenke, Biol. Abstr. 26: 1471. 1952; Heine, Mitteil. Bot. Staatssamml. München 6: 225. 1953; Moldenke, Résumé 192, 244, & 444. 1959.

Small tree or shrub, about 1 m. tall; stems and branches very heavy and coarse, obtusely tetragonal, very medullose, very densely hirsute or hirsute-strigose with pale-cinnamon or ferruginous-

fulvous hairs about 5 mm. long standing at right angles to the stem, more matted and finally even glabrescent toward the base of the plant in age; branchlets very densely pale-cinnamon hirsute-strigose with hairs 3--4 mm. long; principal internodes 3--8 cm. long; nodes annulate; leaves large, decussate-opposite; petioles very stout, 2.5--3 cm. long, about 3 mm. thick, very densely spreading-hirsute or pale-cinnamon hirsute-strigose like the branches, slightly canaliculate beneath; leaf-blades thick-textured, firmly chartaceous or subcoriaceous, elliptic or oblong-elliptic to obovate, 15--30 cm. long, 7.5--11 cm. wide, acute or acuminate at the apex, dentate from near the base to just below the terminal acumination, or very slightly serrate and dentate above the middle, slightly cuneate or rounded at the base, rather densely villosulous-pubescent above, less so in age, very densely matted-tomentose beneath with ferruginous-fulvous hairs, or only the vein and veinlet reticulation very densely cinnamon-ochraceous tomentose-hirsute above and especially the vein and veinlet reticulation densely stellate beneath, the intervenous spaces very minutely yellow glandular-punctate; midrib very stout, flat above, very densely tomentose on both surfaces, very prominent beneath; secondaries slender, 7--12 per side, flat or slightly prominulent above, prominent beneath, arcuate-ascending, running to the margins but not anastomosing; veinlet reticulation quite abundant, obscure above, prominulous beneath, normally hidden by the dense tomentum; inflorescence axillary, 2-per node, somewhat recurved, cymose, 5--7 cm. long, much shorter than the subtending leaf, 4--6.5 cm. wide, composed normally of 2 lateral widely divergent branches and no terminal one, the branches stout, 1--1.5 cm. long, very densely ferruginous-hirsute like the stems, once or twice furcate, bearing 2--4 densely many-flowered subcapitate cymules, very densely pale-cinnamon hirsute-strigose throughout; peduncles stout, 3--4 cm. long, very densely ferruginous-villous like the stems; bractlets lanceolate or lanceolate-ovate, 8--10 mm. long, about 2 mm. wide, attenuate-acute at the apex, densely ferruginous-hirsute or hirsute-strigose with more or less appressed hairs; pedicels completely obscured by the dense villous hairs; flowers sessile at the apex of the inflorescence-branches, very densely glomerulate and only partly visible in the dense strigose tomentum of all parts of the inflorescence, often 6 glomerules per cyme, 15 flowers per glomerule; calyx campanulate, 3--5 mm. long, very densely hirsute with ferruginous many-celled erect hairs or villous with cinnamon-ochraceous hairs outside, glabrous inside, its rim deeply apiculate-lobed; corolla small, white or cream-colored; stamens yellow or lemon-yellow, about 1 mm. long; anthers cream; pistil white, about 1.5 mm. long.

The type of this species was collected by Joseph and Mary Knapp Clemens (no. 31348) at Penibukan, Mt. Kinabalu, at an altitude of 4000--5000 feet, British North Borneo [Sabah], on January 24, 1933, and is deposited in the Herbarium Bogoriense at Buitenzorg, Java. Unfortunately, not knowing of the 1951 valid publication of this binomial, I also published it, credited only to Bakhuizen van den Brink (as the binomial appears on the original

herbarium labels), in 1952 with a dieresis on the "e" and with Clemens & Clemens 33200 from Marai Parai, Mt. Kinabalu, May 22, 1933, as the type, also deposited at Buitenzorg. The earlier publication and typification, of course, are the only valid ones.

The corolla is described as "white" on Clemens & Clemens 31348, 31900, & 33200. Collectors have found the plant growing in open places, flowering in January, March, May, and December. Clemens & Clemens s.n. [Penibukan, Jan. 16, '33], a topotype collection, was distributed as C. "aff. C. roxburghii Wall. ex Walp. vel forma"

Heine (1951) makes the following comments about this plant: "Die hier erstmalig publizierte Art unterscheidet sich leicht von allen bisher bekannten Callicarpa-Arten durch die sehr dichte, zimt- bis ocker-farbige, zottige Behaarung aller Teile. — Die nächstverwandte Art dürfte in C. tomentosa WILLD. (Hongkong, Süd-China) zu erblicken sein, die sich aber von ihr durch eine mehr seidige, auf der Blattunterseite und in der Infloreszenz fast weiszgrause Behaarung und die nahezu kahle Blattoberseite und die viel spärlicher behaarte Blattunterseite unterscheidet. C. macrophylla VAHL (=C. roxburghii WALL. pp.) ist von der vorliegenden Art unterschieden: a) durch die schon bei C. tomentosa WILLD. aufgeführten Merkmale, b) durch die abweichende Blattform und den ardersartigen, viel lockereren und reichverzweigteren Aufbau der Infloreszenz."

In all, 16 herbarium specimens, including type material of all the names involved, and 2 mounted photographs have been examined by me.

Citations: INDONESIA: GREATER SUNDA ISLANDS: Sabah: M. K. Clemens 11273 (Bz—17667, Ca—214827); Clemens & Clemens 31348 (Bz—17681—type, Ca—559534—isotype, N—isotype), 31900 (Bz—17663, Bz—17664), 33200 (Bz—17665, Bz—17666, Ca—557089, Mi, N, N—photo, Z—photo), s.n. [Penibukan, Jan. 16, 1933] (Bz—17682, Bz—17683, Ca—559535, N).

CALLICARPA KINABALUENSIS var. ENDERTI Moldenke, Phytologia 4: 125 & 127. 1952.

Synonymy: Callicarpa kinabaluënsis var. enderti Moldenke, Résumé 444. 1959.

Bibliography: Moldenke, Phytologia 4: 123, 125, & 127. 1952; Moldenke, Biol. Abstr. 27: 984. 1953; Moldenke, Résumé 193 & 444. 1959.

This variety differs from the typical form of the species in having the lower leaf-surface densely hirsutulous, but not matted-tomentose, the peduncles 1 cm. or less in length, and the cymes mucn more open, with the flowers and fruits distinctly pedicellate.

The type of the variety was collected by Frederik Hendrik Endert (no. 2913) — in whose honor it was named — at Long Temelen, northeastern Borneo, at 200 meters altitude, on August 26, 1925, and is deposited in the Herbarium Bogoriense at Buitenzorg, Java.

The collector describes the plant as a tree, and the corollas are said to have been "white" on Endert 2666. In all, 5 herbarium specimens, including the types of all the names involved, and 2 mounted photographs have been examined by me.

Citations: INDONESIA: GREATER SUNDA ISLANDS: Borneo: Endert 2543 (Bz—72711), 2666 (Bz—72710, N), 2913 (Bz—72571—type, N—photo of type, Z—photo of type), 3737 (Bz—72707).

CALLICARPA KINABALUENSIS var. TONSA Moldenke, Phytologia 4: 127. 1952.

Synonymy: Callicarpa kinabaluënsis var. tonsa Moldenke, Résumé 444. 1959.

Bibliography: Moldenke, Phytologia 4: 123 & 127. 1952; Moldenke, Biol. Abstr. 27: 984. 1953; Moldenke, Résumé 193 & 444. 1959.

This variety differs from the typical form of the species in having the pubescence on its branches, branchlets, petioles, peduncles, and inflorescence-branches, as well as on both leaf-surfaces, merely fulvous-pubescent with rather short appressed or subappressed hairs, and the peduncles 1 cm. or less in length, more open, and loose.

The type of the variety was collected by Frederik Hendrik Endert (no. 4489) at Kemvel, at an altitude of 1800 meters, in northeastern Borneo, on October 22, 1925, and is deposited in the Herbarium Bogoriense at Buitenzorg, Java.

In all, 2 herbarium specimens, including the types of all the names involved, and 2 mounted photographs have been examined by me.

Citations: INDONESIA: GREATER SUNDA ISLANDS: Borneo: Endert 4489 (Bz—72708—type, N—isotype, N—photo of type, Z—photo of type).

CALLICARPA KOCHIANA Mak., Bot. Mag. Tokyo 28: 181—182. 1914.

Synonymy: Callicarpa tomentosa Willd., Enum. Plant. Hort. Berol. 158. 1809 [not C. tomentosa Bakh., 1932, nor König, 1893, nor "L. ex Moldenke", 1959, nor "L. ex Spreng.", 1825, nor "L. ex Willd.", 1966, nor (L.) Murr., 1774, nor (L.) Santapau, 1965, nor Lam., 1783, nor Murr., 1893, nor Thunb., 1959, nor Vahl, 1794]. Callicarpa loureiri Hook. & Arn., Bot. Beech. Voy. 206, nom. provis. 1836; E. D. Merr., Trans. Am. Philos. Soc., new ser., 24 (2): [Comm. Lour.] 332—333. 1935. Callicarpa roxburghii Schau. apud Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26: 255, in syn. 1890 [not C. roxburghii Wall., 1829]. Callicarpa longiloba Merr., Philip. Journ. Sci. Bot. 13: 156. 1918. Callicarpa tomentosa Hook. & Arn. apud E. D. Merr., Philip. Journ. Sci. Bot. 13: 156, in syn. 1918. Callicarpa cinnamomea Nakai, Trees & Shrubs Indig. Jap., ed. 1, 340, in nota. 1922. Callicarpa longiloba L. ex Moldenke, Suppl. List Invalid Names 2, in syn. 1941. Callicarpa roxburghii H. J. Lam apud Hara, Enum. Sperm. Jap. 1: 184, in syn. 1948. Callicarpa roxburghii "sensu H. J. Lam" apud

Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1208, in syn. 1962. Callicarpa tomentosa Auct. ex Moldenke, Résumé Suppl. 3: 30, in syn. 1962. Callicarpa tomentosa "sensu Matsum. & Hayata" apud Li, Woody Fl. Taiwan 819, in syn. 1963. Callicarpa tomentosa "sensu Matsum." ex Moldenke, Résumé Suppl. 8: 4, in syn. 1964. Callicarpa tomentosa "sensu auct. Japon." apud Ohwi, Fl. Jap. 764, in syn. 1965. Callicarpa roxburghii "Wall. ex Schau." apud Sprague & Fischer in E. D. Merr., Trans. Am. Phil. Soc. 24 (2): 333, in syn. 1935. Callicarpa loureiroi Hook. & Arn. apud Sprague & Fischer, in herb. Callicarpa loureirii Hook. & Arn., in herb.

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Distrib. Avicenn. 36. 1939; Doi, Journ. Jap. Bot. 16: 382. 1940; Moldenke, Prelim. Alph. List Invalid Names 12 & 13. 1940; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Moldenke, Suppl. List Invalid Names 2. 1941; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 56, 58, 59, 71, & 87. 1942; Moldenke, Alph. List Invalid Names 10 & 11. 1942; Moldenke, Phytologia 2: 94. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 386. 1946; Moldenke, Alph. List Cit. 1: 91, 103, 161, 207, 217, 235, & 255 (1946) and 2: 359, 404, 506, 556, 565, & 566. 1948; H. N. & A. L. Moldenke, Pl. Life 2: 67 & 70. 1948; Hara, Enum. Sperm. Jap. 1: 184. 1948; Moldenke, Castanea 13: 120. 1948; Moldenke, Known Geogr. Distrib. Verbenac., ed. 2, 131, 133—135, 157, & 177. 1949; Moldenke, Alph. List Cit. 3: 657, 666, 702, & 727 (1949) and 4: 1011, 1102, 1200, 1202, 1226, 1238, 1242, & 1299. 1949; Moldenke, Phytologia 3: 139 (1949) and 3: 295. 1950; Lee & Keng, Taiwania 1 (5): 5. 1954; Moldenke, Résumé 168, 172—175, 213, 242, 244, 245, 247, & 444. 1959; Hara, Outline Phytogeog. Japan 65. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 386. 1960; Prain, Ind. Kew. Suppl. 5, pr. 2, 43. 1960; Kitamura & Okamoto, Col. Illustr. Trees & Shrubs Japan 220. 1960; Moldenke, Résumé Suppl. 3: 18 & 30. 1962; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1208, pl. 1016. 1962; Chuang, Chao, Hu, & Kwan, Taiwania 1 (8): 54, 59, & 66, pl. 6, fig. 88. 1963; Li, Woody Fl. Taiwan 818, 819, & 944. 1963; Cave, Ind. Pl. Chromosome Numb. 2: 330. 1964; Moldenke, Résumé Suppl. 8: 3. 1964; Ohwi, Fl. Jap. 764. 1965; Moldenke, Phytologia 13: 502 (1966), 14: 37, 107, 111, & 113 (1966), and 14: 244 & 245. 1967; Moldenke, Résumé Suppl. 15: 17. 1967.

Illustrations: Nakai, Trees & Shrubs Indig. Jap., ed. 1, 340 (1922) and ed. 2, 1: 459, fig. 218. 1927; T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.] pl. 604. 1927; Kanehira, Formos. Trees, ed. 2, fig. 601. 1936; Terazaki, Suppl. Illustr. Fl. Jap. fig. 2486. 1938; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: pl. 1016. 1962; Chuang, Chao, Hu, & Kwan, Taiwania 1 (8): 66, pl. 6, fig. 88. 1963.

Recent collectors describe this plant as a shrub or big shrub, a bush, or a small tree, woody or semi-woody, erect, 1—4 m. tall, the flowers scented, and the fruit white and juicy. The chromosome number is n = 17. Chung refers to it as an "herb, 2 m. tall". The corollas are described as "red" on W. T. Tsang 21573, "pink" on Fung 20404 and Taam 1507, "reddish-purple" on W. T. Tsang 21167, "pinkish-purple" on H. H. Chung 2792, "light-purple" on H. H. Chung 2976, "purple" on H. H. Chung 2475, "purplish" on Ching 2009, "reddish-blue" on Kan 1077, and "green" on Tsui 48.

The species belongs to the Group Tubulosae Briq. Kan reports that the leaves are used in medicine in Chekiang. It has been found growing in silt and sandy soil in swamps, in loam, in dry land on wooded hillsides, dry places in woods, thickets, open scrub, and ravines, on grassy or dry and wooded hillsides, open grassy hillsides, hilltops, and moist gentle slopes, and along streamsides, at altitudes of 60 to 830 meters, flowering from

November to January, in March, and from June to September, and fruiting in February, August, and October to December. Tsang says that it is "abundant" in Kwangtung, but Lau refers to it as "rare, as scattered shrubs in sandy soil on gentle slopes" there; Wilson reports it "common" on Formosa, while Fung refers to it as "fairly common" on Hainan.

Because of the considerable controversy as to the correct identification, typification, and nomenclature of this species, and its interpretation by various writers, the original descriptions are given herewith.

Hooker & Arnott's original description of Callicarpa tomentosa and C. loureiri reads as follows: "Callicarpa tomentosa (Willd.?); ramis petiolis pedunculisque fulvo-villosis, foliis oblongo-lanceolatis acuminatis basi ovatis margine glanduloso-dentatoserratis supra laevibus demum glabratis nervis dense pubescentibus subtus floccoso-tomentosis junioribus utrinque canis, pedunculis petiolum subaequantibus, corymbis trichotomis densifloris calycibusque villosis, staminibus longe exsertis. — Willd. En. Hort. 1. p. 158 ? — C. americana, Lour. Fl. Coch. 1. p. 88. Hab. Canton; Mr. Millet, Island of Pootoy (or Grand Ladrone), Chicow, and the Lama; Rev. G. H. Vachell, no. 91. Willdenow's description is scarcely sufficient, nor did he seem to know from whence his specimens came; if our species prove distinct, it may be called C. Loureiri, for it is undoubtedly the plant of Loureiro. In C. cana of Linnaeus, Vahl, Roxburgh, and Wallich, the leaves are cuneate at the base, becoming, as it were, half decurrent along the petiole. Either the present or the following one is probably C. Revesii of Wallich's list, which we have not seen."

Walpers' original description of C. roxburghii (1845) is as follows: "C. Roxburghii Wall. Catal. 1833. — Ramis teretibus, petiolis et inflorescentiae ramis densissime ferrugineo-lanatis; foliis brevissime petiolatis e basi ovata elliptico-lanceolatis, acuminatis, basi integris, caeterum serrulato-dentatis, supra glabriusculis nervoque medio ferrugineo-tomentello, infra densissime albo-tomentosis subpenninerviis; cymis axillaribus subglomeratis brevissimis dichotomis; calycibus albo-lanatis. Petioli 3 lin. longi, folia 8-pollicaris, 2 — 2 1/2 poll. lata vel majora, longe acuminata, basi attenuata, infra densissime stellata-tomentosa. Cymae brevissimae, dichotomae glomeratae. — C. incana Roxb. non C. cana L. — Crescit in India orientali. — An re vera a C. macrophylla diversa ?? (v. s. sp.)." P'ei (1932) adds "In Wallich's List No. 1833. the plant is indicated by the words 'H. C.' indicating that it was cultivated in the Botanic Garden, Calcutta; it undoubtedly was introduced from Southern China." He says, further: "This species has long been considered to represent Callicarpa tomentosa Willd. Although the type of Willdenow's species is apparently not extant, for Dr. Diels informs us that there is no specimen in the Willdenow Herbarium, it seems clear from his description that Willdenow had a different species. In any case the name tomentosa is invalidated by the earlier."

He describes the species as follows: "Flowers sessile. Calyx woolly without, glabrous within, very prominently 4-toothed; teeth about 0.2 cm. or more in length, slender, elongated. Corolla sparsely pubescent without, glabrous within, 4-lobed; corolla-tube about 0.2 cm. in length. Stamens 4, exserted; anthers less than 0.1 cm. long, open by longitudinal slits. Style exserts the stamens. Ovary glandular."

Just what P'ei means by his footnote statement "Although this binomial is clear than C. Roxburghii Wall., except as the latter appears in 1833 as a nomen nudum, we do not consider it effectively published." The name, C. roxburghii, was first proposed in 1829, with "1833" as the Wallich Catalogue number of the species, not a date. If his word "clear" is a misprint for "earlier", then it could apply to C. americana Lour. or C. tomentosa Willd., both of which are invalid homonyms and therefore not available, but not because they were not "effectively published". His statement that Wallich's list gives "H. C." as the locality of collection is also incorrect. The list actually gives "H. Bl." as the source of the plant, indicating "Herb. Blume" and not that "it was cultivated in the Botanic Garden, Calcutta". P'ei also misdates the Hooker & Arnott publication as "1841" instead of 1836. Actually the dates when the various parts of Hooker & Arnott's important work were published are as follows:

pages 1 to 48, plates 1 to 10 -- 1830
pages 49 to 144, plates 11 to 29 -- 1832
pages 145 to 192, plates 30 to 39 -- 1833
pages 193 to 288, plates 40 to 59 — 1836
pages 289 to 384, plates 60 to 79 — 1838
pages 385 to 432, plates 80 to 89 — 1840
pages 433 to 485 — 1841

Willdenow's original description (1809) reads "Callicarpa tomentosa. C. foliis ovatis acuminatis inaequaliter crenatis basi rotundato-attenuatis integerrimis subtus albo-tomentosis, ramis dense lanato-tomentosis. Habitat.....♄. C. Rami et Petioli lana alba dense tomentosi. Folia tri- s. quadripollicaria ovata acuminata, margine grosse inaequaliter crenata basi rotundato-attenuata, apice et basi integerrima, supra viridia, fasciculis pilorum sparsis obsita, subtus albo tomentoso aequali obducta. Flores nondum vidi. Valde similis C. americanae, cujus foliorum basi cuneata et tomentum tenuissimum, habitusque differans. Callicarpa cana ab hac diversa: foliis basi cuneatis margine acute denticulatis tomento subtus et ramulorum tenuiori. A C. lanata toto coelo diversa." This reference is sometimes cited as "1808", but the actual date of publication was 1809.

Walpers' description (1852) of C. tomentosa is as follows: "Callicarpa tomentosa Willd. — Schauer in DC. l. c. 647. no. 28. — Hance, Diagn. pl. nov. Austr. Chin. II. 4. -- Arbuscula: ramulis pedunculisque cum inflorescentia, ramis petiolisque tomento densissimo cinnamomeo villoso-hirsutis; foliis oblongo- vel

lanceolato-ellipticis breviter petiolatis, basi cuneatis, apice longe acuminatis, supra medium tenuiter serrato-dentatis, adultis supra opacis, venis subtiliter et sparse cano-pubentibus, caeterum glabris, subtus praesertim in venis venulisque prominulis pilis stellatis candicantibus dense tomentosis, utrinque minutissime glanduloso-punctatis; cymis breviter pedunculatis confertis glomerulosis; calyce dense tomentoso-villoso tubuloso quadrangulato quadripartito, laciniis lanceolato-subulatis. — Folia 9 poll. longa (incl. petiolo pollicari), 3 1/2 — 4 poll. lata. Pedunculi petiolum subaequantes. Cymae ter quaterve bifidae, bracteolae subulatae, pedicellos aequantes; flores in apicibus inflorescentiae ramulorum densissime glomerati. Calyx 2 lineas longus albo-villosus. Corollae roseo-purpureae tubus glaberrimus, calyce inclusus, limbi exserti extus villosuli laciniae obtusae. Stamina longissime exserta. — Species pulcherrima a Celeb. Schauer in DC. Prodr. XI. 647. inter recognoscendas relegata, C. Zollingerianae Schr. C. mollis Sieb. & Zucc. et praecipue C. Roxburghii Wall. affinis. -- Habitat in insula Hongkong Sinensium."

Bakhuizen van den Brink's (1921) description is also noteworthy in this connection: "Callicarpa Roxburghii Wall. Cat. No. 1833 (1828) ex Walp. Rep. Bot. Syst. IV (1844—1848) p, 127; Schau. in DC. Prod. Syst. Nat. XI (1847) p. 640. — C. tomentosa (not. of Murr.) Willd. Enum. Plant. (1809) p. 158. — C. longiloba Merr. Phil. Journ. Sc. Bot. XIII (1918) p. 156. — A shrub or small tree; branchlets, cymes and petioles densely villous or woolly; leaves rather large, membranous, oblong or sublanceolate, base obtuse or cuneate, shortly attenuate, apex rather long acuminate, margins serrate-dentate, except at the base and the top, upper side, when adult, glabrous or with some stellate hairs, lower side softly white or greyish tomentose; pairs or nerves 10—15; 10—20 c.M. by 3.5—10 c.M.; petioles 1—2.5 c.M.; cymes rather small, globose-glomerulate, 2—4 c.M. long, 3—5 c.M. in diam.; peduncles short, 1.5—2 c.M. long; calyx tubular, densely floccose outside, 0.3—0.5 c.M. long; segments 4, lanceolate, 0.20—0.25 c.M. long; corolla shortly exsert, 0.30—0.45 c.M., tube glabrous, segments 4, ovate, 0.10—0.12 c.M. long, 0.15—0.20 c.M. broad, densely villous outside; stamens 0.5—0.7 c.M.; anthers glandular, 0.07—0.10 c.M.; style 0.6—0.8 c.M. with subpeltate or obscurely 2—4-lobed stigma; ovary hairy and glandular; drupe somewhat hairy and glandular on the top, white when mature, 4-seeded. Hongkong: Hance No. 337; Weisz No. 2588. Distribution: S-China: Hongkong! Canton! Amoy! Kwangsi!"

Under the present edition of the International Rules of Botanical Nomenclature the original publication of the name, C. loureiri, by Hooker & Arnott (1836) and used for the past 33 years as the accepted name for the species is not a valid publication, since the authors merely proposed it as an alternative or provisional name, not definitely accepted by themselves at that time. This is another unfortunate example of the fallacy of the claim that the ever more complicated "International Rules" maintain "stability in nomencla-